

REMARKS/ARGUMENTS

Claim Rejections – 35 USC 103

Examiner has rejected Claims 1-3, 9-11, 14, 15, 19-21, 25-27, 33-35, and 42-47 under 35 USC 103(a) as being anticipated by Reich and further in view of Stylli.

In response to the rejection, Applicant has amended independent Claim 1 to include the following limitation:

An automated storage and retrieval device for trays holding subject matter, comprising:

- A) ***an access device for the insertion and removal of a plurality of trays,***
- B) a storage rack comprising a plurality of vertically aligned storage slots for vertically storing a plurality of trays,
- C) at least one automated machine,
- D) a storage gantry for vertical and horizontal movement of said plurality of trays between said storage rack and said at least one automated machine, said storage gantry being adopted to remove trays one-at-a-time from any one of said plurality of vertically aligned storage slots, transport the removed tray to said at least one automated machine, remove trays one-at-a-time from said at least one automated machine, and to return the removed tray to any one of said plurality of vertically aligned storage slots, and
- E) at least one computer system programmed to control said storage gantry.
(emphasis added)

In rejecting Applicant's Claim 2, Examiner states

Reich further discloses the automated storage and retrieval device as in Claim 1 further comprising an access device, wherein said storage gantry moves said plurality of trays between said storage rack and said access device (Figures 2, 3 and 14; Column 3, Lines 5-21; Column 10, Lines 13-35).

In response, Applicant submits that Examiner's citations of Reich do not show the limitations of Claim 1 as presently amended. Instead, Reich merely shows and discusses a tray sitting on a conveyor system. Applicant is not claiming he invented a tray sitting on a conveyor system. Instead, Applicant's device is unique compared to any prior art

reference shown by Examiner. Only Applicant has invented the automatic device claim in Claim 1 with a separate access device for the insertion and removal of a plurality of trays. Applicant's device allows an operator to load the access device sequentially with trays. They are then automatically transferred to a separate storage rack via a separate storage gantry. Conversely, the trays can likewise be automatically transferred from the storage rack back to the separate access device for removal by the operator. This feature is not shown in the prior art references cited by Examiner.

In addition to Claim 1, analogous claims have been similarly amended and are now allowable for similar reasons.

Claim 13

In response to Examiner's rejection, Applicant has amended Claim 13 to include the limitation "a plurality of tapered guide pillars for guiding said at least one micro-well plate into said plurality of trays when an automated robotic device places said at least one micro-well plate into said plurality of trays." The Reich reference cited by Examiner does not show a micro-well plate. It does not show a micro-well plate tray. Finally, it does not show a tapered guide pillars for aligning micro-well plates into a tray when an automated robotic device places the micro-well plates into a tray. Automatic devices are not able to easily deal with slight alignment problems. Therefore, the tapered guide pillars assist the automatic device in correctly placing the micro-well plate into the tray.

In addition to Claim 13, analogous claims have been similarly amended and are now allowable for similar reasons.

Claims 46 and 47

Applicant has amended Claim 46 so that it now reads:

The automated storage and retrieval device as in Claim 1, wherein said at least one computer system is programmed to automatically identify the subject matter in each tray after the tray has been placed in said access device and prior to transfer to said storage gantry for storage in said storage rack, wherein said computer system is programmed to record the

location and the identity of the subject matter after said storage gantry has placed said tray in said storage rack.

This limitation is not shown in Stylli or in the other prior art. By automatically identifying the subject matter in each tray prior to transfer to the storage gantry, Applicant is able to compile an immediate and accurate record of the subject matter immediately after it is placed into the separate access device. This allows for a very accurate and complete accounting of all trays and their contents.

Claim 45

In rejecting Claim 45, Examiner states that “automatic operations happen at pre-programmed time intervals as fed into the system (col. 27).” Applicant respectfully disagrees. The time intervals Examiner refers to in Stylli’s Table 2 shown in column 27 are only milliseconds apart and are useless for determining and measuring protein crystal growth. Plus the time intervals depicted in Stylli’s Table 2 are only Detection/Integration time differentials and do not require Stylli’s system to run through steps the same as or similar to Applicant’s claimed steps F – I. However, to even further distinguish Applicant’s invention, Applicant has amended Claim 45 and has added Claim 48.


Claim 49

Applicant has added new Claim 49 directed to a standby station. The standby station disclosed by Applicant adds significantly to the efficiency of Applicant’s device by decreasing the amount of time that the indexer of the proteomic crystal verification and inspection system is empty. For example, while one tray is being processed by the protein crystal and verification system, another tray is waiting its turn on the standby station. This allows for the storage gantry to return to the storage rack to retrieve yet another tray. The standby station is very close in proximity to the indexer of the protein crystal and verification which allows for a very short time lapse in transfer between the two. The utilization of a standby station is not shown in the prior art.

Conclusion

Thus, for all the reasons given above, this application, as the claims are presently limited, defines a novel, patentable, and truly valuable invention. Hence allowance of all outstanding claims in this application is respectfully submitted to be proper and is respectfully solicited.

Respectfully Submitted,



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